EECS 233 Project Proposal

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Proposal

Summary

Our project will be a graphical respresentation of sorting algorithms.

GUI

The program will launch a GUI, with the option to select the following sorting algorithms:

- `HeapSort`
- `InsertionSort`
- `MergeSort`
- `BubbleSort`
- `QuickSort`

Any number of algorithms can be selected. Additionally, the user will be able to enter the size of the array that will be sorted.

Graphical Representation

Once the user inputs this information, a window will launch that will compare the sorting algorithms. For each algorithm selected, a graphical representation of the array will be initialized. The array index will be on the x-axis and the value in the array will be on the y-axis.

The graph will illustrate how each sorting algorithm functions, highlighting the parts of the array being changed. Additional important information (such as the pivot for `QuickSort` and the subarrays in `MergeSort`) will also be highlighted on the graphs. The sorts will have to be slowed down, to better illustrate how the algorithms function. Without this, the sorting would happen too quickly and it would be incomprehensible.

Code

We plan on writing all of the code for the sorting algorithms, as it is an opportunity to translate the logic we covered in class to Java. The only code that we may be using that does not come directly from the Java API is an API for graphically representing the sorting algorithms.